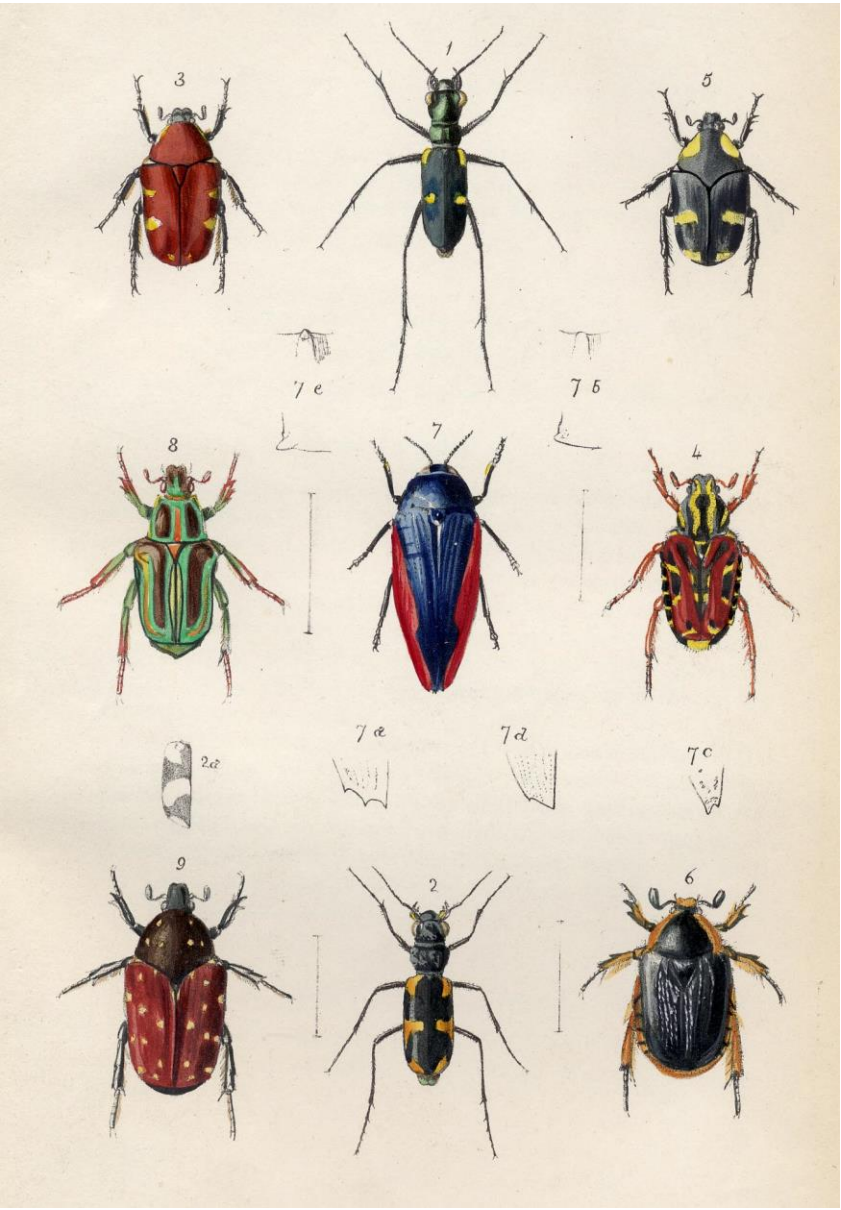
SCIENCE OLYMPIAD SUMMER STUDY SESSION

TWIRLFS' 2014 ENTOMOLOGY TEST KEY

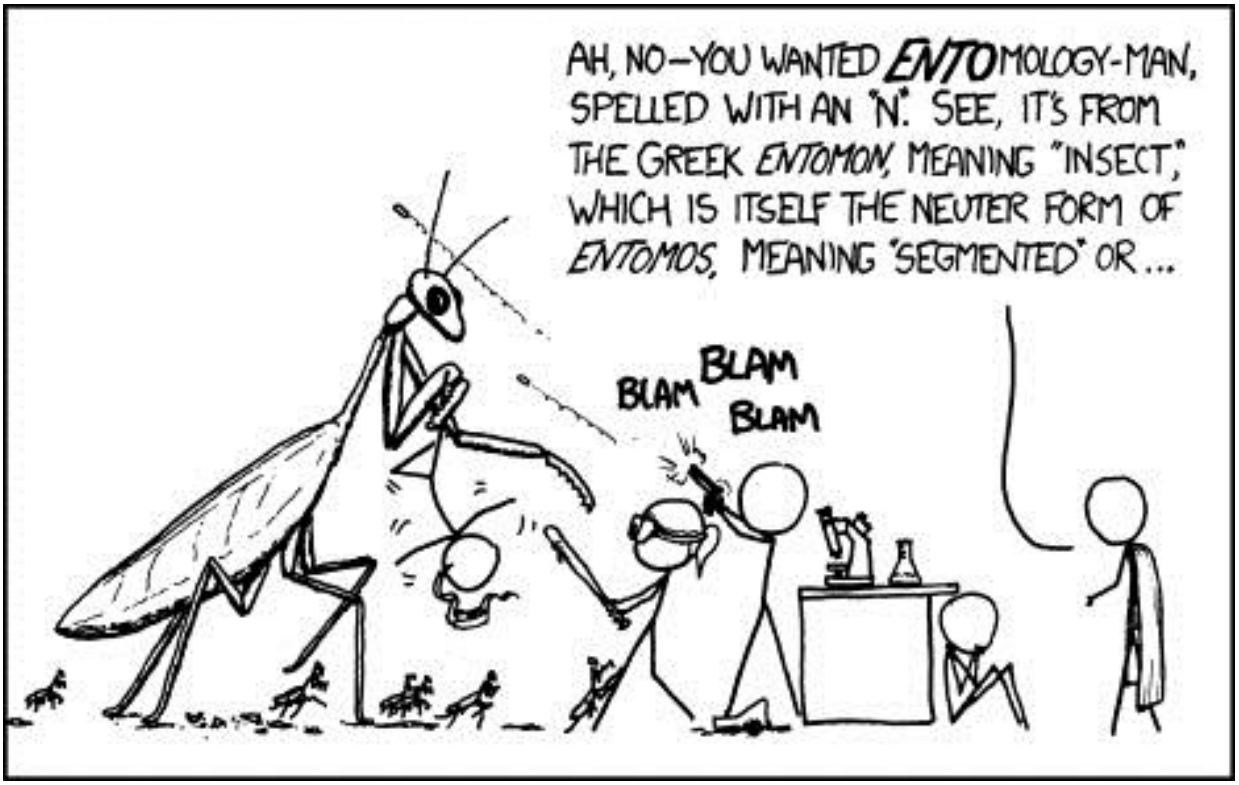


Name:_____ Score(Out of 105):_____

Instructions:

Welcome to the wonderful world of Entomology!

- This test is a station-based test and you will have 3 minutes to work at every station.
- There are a total of 16 stations.
- Follow the instructions every station has posted.
- Point values will vary per question.
- Enjoy!



Station #1

Every question is worth one point. Please circle your answer for multiple choice and true or false questions. There is only one correct answer per question.

1. What function do quinine cross-linkages have in the exoskeleton?

   A. They make membranes more flexible
   B. They darken the color of the exoskeleton
   C. They make the sclerites rigid
   D. They make it impermeable to water

2. Rigid, inflexible regions of an insect's exoskeleton are called:

   A. Apodemes
   B. Sclerites
   C. Segments
   D. Sutures

3. (T /F) Caterpillars are insects.

4. (T /F) All ants have a bend in their antennae.

5. (T /F) A butterfly will die if you touch its wings.

6. (T /F) Beetles are important and early pollinators

7. What insect causes the most human deaths? _____

Station #2

Point values vary and are printed beside questions. This section consists of fill-in questions, short answers, and multiple choice.

8. What is the major chemical component of an insect's exoskeleton? (1)

A. Lipid
B. Protein
C. Cellulose
D. Chitin

9. What part of the exoskeleton is made up of living cells? (1)

A. Epidermis
B. Procuticle
C. Cuticulin Layer
D. Basement Membrane

10. The cuticle is the upper portion of insect integument and contains two segments: _____ and _____. (2)

11. What are some helpful adaptations/traits that let insects survive? Please give at least 2 examples. (2)

_____

_____

12. What are some ways that insects can benefit humans? Please give at least 2 examples. (2)

_____

_____

Station #3

Point values vary and are printed beside questions. This section consists of short answers and one listing question.

13. Name four physical characteristics of arthropods. (4)

_____

_____

_____

_____

14. Name the three thorax divisions (3):

1. _____
2. _____
3. _____

15. Name five functions of an exoskeleton (5):

_____

_____

_____

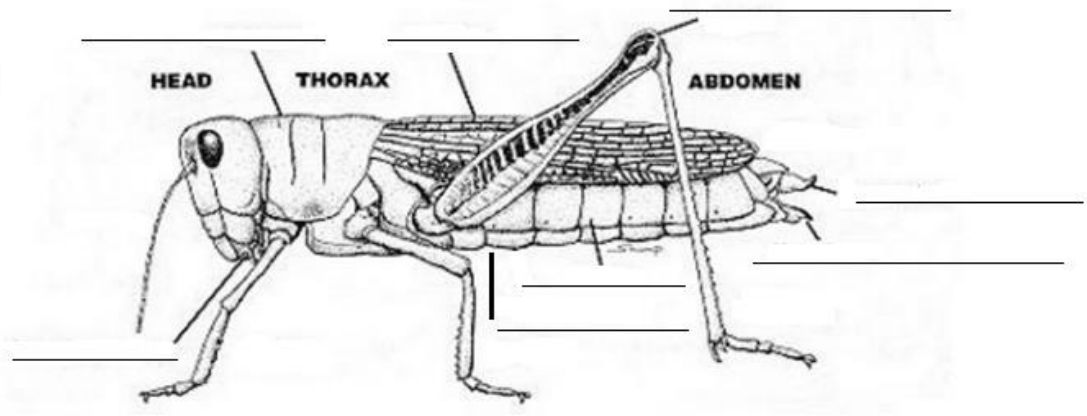
_____

_____

Station #4

Label the following insect parts. Each fill-in is worth one point. Then, write the letter of the word that matches the definitions in #17-21. Use the wordbank to help you. Each word is worth one point.

16.



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17. Feeding on blood

18. Having incomplete metamorphosis, that is, showing gradual change from molt to molt, with externally developing wing pads.

19. Having complete metamorphosis, passing through egg, larval, pupal, and adult stages.

20.The second, usually small, segment of the antenna.

21. The dorsal, often shieldlike sclerite of the prothorax.

A. Hemimetabolous B. Proprioreceptor C. Holometabolous D. Pedicel
E. Hematophagous F. Protonum G. Rhabdom H. Chitin

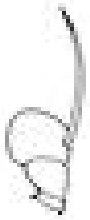
Station #5

Fill-in the insect antenna type. Use the word bank to help you. Every question is worth 2 points.

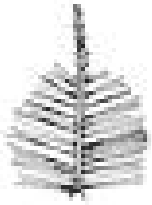
Word Bank: Filiform, Setaceous, Capitate, Pectinate, Plumose, Stylate, Moniliform, Ciavate, Lamellate, Bipectinate, Aristate, Serrate

22. _____

23. _____



24. _____



25. _____

26. _____

27. _____

Station #6

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

28. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

29. What is the name of the organ that connects the hindwings to the forewings in winged members of this order? (2) _____

30. What type of metamorphosis does this insect display- Simple or Complete? (1)

_____

Station #7

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

31. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

32. The name of the order that this insect belongs to translates from Greek to: (1)

A. straight winged
B. round winged
C. red winged
D. gross bug

33. What type of metamorphosis does this insect display- Simple or Complete? (1)

_____

Station #8

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

34. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

35. Flies in this order usually have how many pair(s) of membranous wings (besides the few parasitic species that are wingless)? (1)_____

36. Which of the following insects is included in this order? (1)

A. Whitefly
B. Fruit Fly
C. Sawfly
D. Dragonfly
E. Bill Nye the Science Fly

Station #9

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

37. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

38. What is the common name used to describe these net-winged insects? (1):

_____

39. The name of the order that this insect belongs to translates from Greek to: (1)

A. Neuron fly
B. Brain wings
C. Nervous wings
D. Vein wings
E. Nerve wings

Station #10

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

40. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

41. What are the larvae of this order destructive towards? Give two examples. (2) _____

_____

_____

42. The name of the order this insect is in comes from the latin word for _____? (1)

Station #11

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

43. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

44. How do domestic species like in this order cause extensive damage to household goods? Give two examples. (2)_____

_____

45. What two environments do organisms of this order live in? (2) _____

_____

Station #12

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

46. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

47. What type of climate does this insect live in? (1)_____

_____

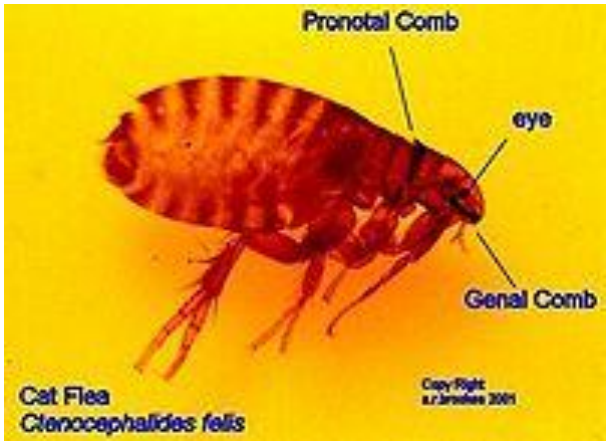
48. Name two ways this insect is a common pest. (2)_____

_____

_____

Station #13

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.



49. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

50. The mouthparts of insects in this order are adapted for what two actions? (2)

_____

51. Name a common brand of treatment to get rid of this parasite (2): _____

_____

Station #14

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

52. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

53. What type of metamorphosis do the organisms in this order perform? (1)

_____

54. The order name of these insects indicates what about their life-spans? (1) _____

_____

Station #15

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

55. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

56. Around how many species worldwide exist in this order? (1) _____

57. Which of the following statements is false? (2)

A. None of the insects of this order are considered pests
B. Some females of this order will accept a male suitor only if he brings her a gift of prey
C. Insects of this order have been known to rob freshly caught prey from spider webs.
D. The common name of this order refers to the distinctive appearance of male genitalia in members of a family in this order.
E. None of the above

Station #16

Point values vary. Answer the following identification questions below, as they pertain to the selected specimen.

58. To what order (Division B) or family (Division C) does this insect belong to? (2)

_____

59. What is the common name for insects in this order? (1) _____

60. Insects in this order are found the following locations: (circle all that are correct) (2)

A. N. America
B. S. America
C. Asia
D. Europe
E. Africa
F. Australia
G. Antarctica